

What is claimed is:

1. An automatic control device for a gearbox of a motorized vehicle, the motorized vehicle gearbox including a movable block movable between a forward driving position for driving the motorized vehicle forward, a neutral position, and a reverse driving position for driving the motorized vehicle rearward, the automatic control device comprising:
 - a motor;
 - a transmission gear driven by the motor, the transmission gear including an eccentric axle provided thereon;
 - 10 a connecting rod having a first end rotatably connected to the eccentric axle and a second end;
 - an eccentric block including a first end rotatably connected to the second end of the connecting rod and a second end; and
 - an actuating device including a first end securely connected to the second end of the eccentric block and a second end securely engaged with
15 the movable block to move therewith;
 - wherein when the motor is activated, the transmission gear is driven to move the movable block via transmission by the eccentric axle, the connecting rod, the eccentric block, and the actuating device, thereby
20 moving the movable block to one of the forward driving position, the neutral position, and the rearward driving position.
2. The automatic control device as claimed in claim 1, wherein the actuating device includes an actuating wheel having a longitudinal axle extending therefrom, the longitudinal axle of the actuating wheel being securely
25 connected to the second end of the eccentric block, a positioning groove being defined in a periphery of the actuating wheel and including three

positioning sections respectively corresponding to the forward driving position, the neutral position, and the rearward driving position of the movable block, an actuating rod including a first end slidably guided in the positioning groove and movable between the three positioning sections, the
5 actuating rod further including a second end connected to the movable block to move therewith.

3. The automatic control device as claimed in claim 2, wherein the gearbox includes a transmission shaft, a first gear mounted on the transmission shaft for forward driving, a second gear mounted on the transmission shaft for
10 rearward driving, the movable block being mounted on the transmission shaft to move therewith, the movable block being slidable along a longitudinal direction of the transmission shaft, the movable block including two protrusions respectively on two sides thereof for respectively and releasably engaging with one of an engaging groove defined in a side of the first gear
15 and an engaging groove defined in a side of the second gear, thereby driving the motorized vehicle forward or backward.

4. The automatic control device as claimed in claim 3, wherein the first end of the eccentric block further includes an actuating peg formed thereon, the actuating wheel including an abutting member formed on an end face thereof,
20 further including an elastic element mounted around the longitudinal axle of the actuating wheel and including a first end abutting against the actuating peg of the eccentric block and a second end abutting against the abutting member.

5. The automatic control device as claimed in claim 4, wherein when the
25 movable block is in one of the forward driving position and the rearward driving position and when a respective protrusion of the movable block is not

aligned with an associated one of the engaging grooves, the motor turns further to move the transmission gear and the eccentric block to a predetermined position, the actuating peg of the eccentric block turns and thus causes displacement of the first end of the elastic element, the movable
5 block turns to urge the respective protrusion of the movable block to be aligned with the associated one of the engaging grooves, the second end of the elastic element turns the abutting member and the actuating wheel to a predetermined position under the action of the elasticity of the elastic element, thereby absorbing additional travel of the motor, the transmission gear, and
10 the eccentric block.

6. The automatic control device as claimed in claim 1, wherein the actuating device includes a rod having a first end and a second end, an axle being formed on the first end of the rod and securely connected to the second end of the eccentric block, the second end of the rod being connected to the
15 movable block to move therewith.
7. The automatic control device as claimed in claim 6, wherein the gearbox includes a transmission shaft, a first gear mounted on the transmission shaft for forward driving, a second gear mounted on the transmission shaft for rearward driving, the movable block being mounted on the transmission shaft
20 to move therewith, the movable block being slidable along a longitudinal direction of the transmission shaft, the movable block including two protrusions respectively on two sides thereof for respectively and releasably engaging with one of an engaging groove defined in a side of the first gear and an engaging groove defined in a side of the second gear, thereby driving
25 the motorized vehicle forward or backward.

8. The automatic control device as claimed in claim 7, wherein the first end of the eccentric block further includes an actuating peg formed thereon, the first end of the rod including an abutting member formed thereon, further including an elastic element mounted around the axle, the elastic element including a first end abutting against the actuating peg of the eccentric block and a second end abutting against the abutting member.
9. The automatic control device as claimed in claim 1, further including a sensor mounted on the eccentric block and a sensing device for detecting an angular position of the eccentric block by means of detecting a position of the sensor, the sensing device stopping the motor based on detected angular position of the eccentric block, thereby positioning the movable block in one of the forward driving position, the neutral position, and the rearward driving position.
10. The automatic control device as claimed in claim 2, further including a sensor mounted on the eccentric block and a sensing device for detecting an angular position of the eccentric block by means of detecting a position of the sensor, the sensing device stopping the motor based on detected angular position of the eccentric block, thereby positioning the movable block in one of the forward driving position, the neutral position, and the rearward driving position.
11. The automatic control device as claimed in claim 3, further including a sensor mounted on the eccentric block and a sensing device for detecting an angular position of the eccentric block by means of detecting a position of the sensor, the sensing device stopping the motor based on detected angular position of the eccentric block, thereby positioning the movable block in one

of the forward driving position, the neutral position, and the rearward driving position.

12. The automatic control device as claimed in claim 4, further including a sensor mounted on the eccentric block and a sensing device for detecting an angular position of the eccentric block by means of detecting a position of the sensor, the sensing device stopping the motor based on detected angular position of the eccentric block, thereby positioning the movable block in one of the forward driving position, the neutral position, and the rearward driving position.
13. The automatic control device as claimed in claim 5, further including a sensor mounted on the eccentric block and a sensing device for detecting an angular position of the eccentric block, the sensing device stopping the motor based on detected angular position of the eccentric block, thereby positioning the movable block in one of the forward driving position, the neutral position, and the rearward driving position.
14. The automatic control device as claimed in claim 6, further including a sensor mounted on the eccentric block and a sensing device for detecting an angular position of the eccentric block by means of detecting a position of the sensor, the sensing device stopping the motor based on detected angular position of the eccentric block, thereby positioning the movable block in one of the forward driving position, the neutral position, and the rearward driving position.
15. The automatic control device as claimed in claim 7, further including a sensor mounted on the eccentric block and a sensing device for detecting an angular position of the eccentric block by means of detecting a position of the sensor, the sensing device stopping the motor based on detected angular

position of the eccentric block, thereby positioning the movable block in one of the forward driving position, the neutral position, and the rearward driving position.

16. The automatic control device as claimed in claim 1, further including a
5 reduction gear mounted between the motor and the transmission gear.
17. The automatic control device as claimed in claim 1, wherein the motor turns in the same direction to switch the movable block between the forward driving position, the neutral position, and the rearward driving position.
18. The automatic control device as claimed in claim 17, wherein the
10 transmission gear turns in the same direction to switch the movable block between the forward driving position, the neutral position, and the rearward driving position.
19. The automatic control device as claimed in claim 2, wherein the motor turns in the same direction to drive the actuating wheel in a first direction and then
15 in a second direction opposite to the first direction.
20. The automatic control device as claimed in claim 6, wherein the motor turns in the same direction to drive the rod in a first direction and then in a second direction opposite to the first direction.